

no sense to deny CLECs access to network elements today on the basis of network changes that will not come for years, and that may never be made at all (at least not in the currently proposed mode). To the extent it becomes clear that ILECs intend to substantially modify their existing networks in the future by deploying FTTH, the application of section 251(c)(3) to fiber loops can be reassessed at that time.

**B. There Is No Basis In Law Or Economics For The ILECs' Requested "New" And "Broadband" Facilities Exceptions To The Act's Unbundling Obligations.**

The Commission should reject the ILECs' claim that the Commission should free both existing "broadband" and "new" facilities from the unbundling requirements of section 251(c)(3). As explained below, eliminating broadband unbundling obligations would allow ILECs to exercise their "almost insurmountable competitive advantage" with respect to "last mile" facilities, *Verizon*, 122 S. Ct. at 1662, over nascent advanced services. Unlike new entrants, the ILECs have incentive to limit the availability of DSL and keep DSL prices high because DSL-based service cannibalizes existing ILEC offerings that enjoy high margins. Vigorous "intramodal" competition helps to prevent the ILECs from acting on those incentives, ensuring that DSL-based services will be reasonably priced and broadly deployed.

Nor is a "new" facilities exception to the Act's unbundling obligations sound public policy. Even assuming *arguendo* there were a bright line between a "new" facility and an upgrade/modification to an "old" facility, it is simply not true that CLECs can deploy new facilities at costs remotely comparable to the ILECs' costs. Rather, the ILECs have huge scale and scope efficiencies that permit them to serve new customers at much lower costs than CLECs, regardless of whether the investment at issue is copper or fiber or a hybrid. A new facilities exception, therefore, would wall off millions of Americans from competition and keep them captives of the ILECs' monopolies.

In this regard, the TELRIC-based rates that the ILECs receive when leasing access to their “broadband” networks provide a return that compensates the ILECs fully for the risks that they take in building the underlying facilities. This is not just AT&T’s view, but that of the Supreme Court. Because “TELRIC rates are calculated on the basis of individual elements,” “TELRIC rates leave plenty of room for differences in the appropriate depreciation rates and risk-adjusted capital costs depending on the nature and technology of the specific element to be priced.” *Verizon*, 122 S. Ct. at 1678. For all these reasons, the best way for the Commission to ensure the wide deployment of advanced telecommunications capability is not, as the ILECs seek, to grant them a broadband monopoly over DSL-based services, but to allow competitors to gain access non-discriminatory to bottleneck loops so that they can use those loops in connection with their own electronics and packet switching to offer a broad array of broadband services.

In particular, the ILECs argue that their “existing” facilities are subject to “intermodal” competition from alternative broadband providers and that principles of “regulatory parity” make unbundling unnecessary and inappropriate. *See BellSouth* at 37-44; *SBC* at 22-23; *Verizon* at 72-76. With respect to “new” facilities – which *SBC* (at 19-20) asserts must include at least “greenfield” investments and any facility used to provide broadband service – the ILECs claim that these facilities should be exempt from section 251(c)(3) because the unbundling “costs” of NGDLC loops are high, *see SBC*, Att. C, and because such unbundling would deny them the “fruits” of their investment and thus reduce their incentive to deploy such facilities, *see BellSouth* at 46; *Verizon* at 27-33. Also, they assert that CLECs are not “impaired” without access to facilities that are not yet deployed, because “the CLEC stands – today – in exactly the same position as the ILEC” with respect to such facilities. *SBC* at 17; *see also id.* at 47. All of these claims are meritless.

As a threshold matter, the ILECs' arguments suffer from three overarching flaws. *First*, AT&T has already shown that "[w]here infrastructure investments are independently justified solely by the resulting savings in the provision of existing voice and other services, there is not even a colorable claim that the Commission need afford the ILEC an opportunity for an unbounded return from DSL to provide 'incentives' for these investments to be made." Willig Dec. ¶ 171. That is precisely the case here. The ILECs' "broadband" investments inherently apply to facilities that provide *both* narrowband *and* broadband services,<sup>26</sup> and these investments decrease the operational and capital costs of providing the narrowband services. Indeed, the ILECs' own statements to investors – made under the penalties of the federal securities laws – expressly claimed that deploying the fiber necessary to make existing copper loops DSL-capable is justified *solely* by the savings achieved with respect to voice services.<sup>27</sup> Independent analysts cited by the ILECs themselves confirm that, given the ILECs ubiquitous local networks and huge economies of scale, reducing copper loops to the length that can support DSL services by deploying fiber feeder in long loops generates billions of dollars in savings.<sup>28</sup> And, as BellSouth's chairman has correctly asserted, once fiber feeder has been deployed, the

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<sup>26</sup> For these purposes "narrowband" refers to the voice and data services provided over the low frequency spectrum of a DSL-capable loop and "broadband" refers to the voice and data services provided over the high frequency spectrum of such loops.

<sup>27</sup> See SBC Investor Briefing, *SBC Announced Sweeping Broadband Initiative*, at 2 (Oct. 18, 1999) ("*Project Pronto Announcement*").

<sup>28</sup> McKinsey & Company and JP Morgan, *Broadband 2001*, at 75-77 (Apr. 2, 2001) ("*Broadband 2001 Report*").

incremental investment in the electronics necessary to provide services is “a fairly modest expense.”<sup>29</sup>

*Second*, unbundling does *not* increase the risk of deploying new facilities in general or broadband networks in particular. *Cf.* Verizon at 27-32. In fact, unbundling actually *decreases* the ILECs’ business risks in deploying NGDLC and FTTH. Willig Reply Dec. ¶ 88; Clarke-Donovan Reply Dec. ¶ 35. Providing NGDLC loops to intramodal competitors increases the chances that customers will choose DSL-based services that all rely on their ILECs’ facilities rather than cable-based services (where such options are available). The main risk that ILECs face with FTTH is whether there is in fact sufficient demand for high bandwidth services that would justify the high costs of FTTH. If CLECs are permitted to use those facilities to provide competing services, such unbundling lowers that risk, because the ILECs would not only benefit from the retail customers they can convince to sign up for FTTH, but also from traffic and revenues generated by CLEC wholesalers. Willig Reply Dec. ¶ 88; Clarke-Donovan Reply Dec. ¶ 35. Economics therefore predicts that *more* customers would be willing to purchase broadband services in total when there are multiple entities marketing those services than if the ILEC were the sole marketer. Indeed, the ILECs themselves implicitly recognize this point by stating that they would have commercial incentives to offer wholesale broadband access to competitors. Verizon at 82 (“The widespread deployment of broadband services and facilities will require enormous investments and result in huge fixed costs. Obviously, the more traffic on the network, the easier it is to recover those costs.”).<sup>30</sup> In fact, if the ILECs are correct that their

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<sup>29</sup> See Duane Ackerman, *Remarks at the Goldman Sachs Communicopia Conference* (Oct. 3, 2001) (emphasis added).

<sup>30</sup> The ILECs, of course, would like to be able to offer this access at supracompetitive rates that are much higher than TELRIC would allow. *Id.* at 82. This makes plain that their quarrel is not  
(continued . . .)

cable company competitors are draining significant traffic from their networks, it is irrational for them to deny access to wholesalers who would pay fully compensatory rates that share the risks and costs of NGDLC/FTTH and also help to retain traffic on the ILECs' facilities.

*Third*, the implicit premise of the ILECs' arguments – that “but for” existing unbundling obligations the ILECs stand ready to make massive investments in new broadband networks – is a sham. Certainly, there is no legitimate claim that deployment of existing NGDLC technology is impaired by the Act's unbundling obligations. As the ILECs' press statements to Wall Street show, ILEC DSL-based services have experienced phenomenal growth.<sup>31</sup> This growth is directly due to the enormous investments that the ILECs have *already* made in their upgrading their networks, which can now provide broadband services to the vast majority of their subscribers. Indeed, only a few months ago, the Commission stated that “[i]n 2000, [ILECs] invested almost

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with the Act's unbundling obligations themselves, but merely with the rates that they can charge for unbundled access. As explained below, the Supreme Court's *Verizon* decision squarely forecloses that argument.

<sup>31</sup> See [http://www.sbc.com/investor\\_relations/financial\\_and\\_growth\\_profile/investor\\_briefings/0,5931,272,00.html](http://www.sbc.com/investor_relations/financial_and_growth_profile/investor_briefings/0,5931,272,00.html) (informing investors that SBC “further expanded its DSL Internet base to more than 1.5 million lines – building on its industry-leading position. SBC ended 2001 as the Nation's No. 1 provider of DSL Internet service – with 1.3 million lines in service and the industry's largest DSL network coverage, reaching 25 million DSL-capable customer locations.”); <http://investor.verizon.com/financial/quarterly/VZ/1Q2002/1Q02Bulletin.pdf> (informing investors that Verizon now has “1.35 million digital subscribers lines (DSL) with approximately 150,000 net additions in the quarter, representing an 88 percent increase year-over-year.”); <http://bellsouthcorp.com/proactive/newsroom/release.vtml?id=40063> (“Boosted by continued growth in Broadband DSL Internet access for residential customers, [BellSouth] data service revenues were \$1.12 billion in the first quarter of 2002, resulting in a year-over-year growth rate of nearly 15 percent. . . . [BellSouth] added 108,000 Broadband DSL customers in the first three months of 2002, and had 729,000 retail and wholesale DSL customers at March 31, an annual growth rate of 141 percent.”); [http://media.corporate-ir.net/media\\_files/NYS/q/q\\_4\\_30\\_02earnrel.htm](http://media.corporate-ir.net/media_files/NYS/q/q_4_30_02earnrel.htm) (informing investors that Qwest's “total DSL (digital subscriber lines) revenues increased approximately 77 percent year-over-year. Total DSL customers, including in-region and out-of-region DSL customers, increased to 484,000 at the end of the first quarter 2002, a 58 percent increase from the same period of 2001.”).

\$29.4 billion in infrastructure,” and that a “substantial portion” of the investment was to allow “high speed or advanced data services” to be offered more broadly. *See Third Section 706 Report* ¶ 69.<sup>32</sup> As a consequence of these and subsequent investments, Verizon now states that high-speed service can be offered on 79% of its access lines,<sup>33</sup> and BellSouth claims that this will also be true for 76% of its customers by year-end, up from 45% in 2000 – a 68% increase in only two years.<sup>34</sup> SBC reports that it has expanded its DSL-capable footprint by 37% to 25 million customers in 2001 alone and that currently 60% of its households are DSL-qualified.<sup>35</sup>

The extent of these investments is also reflected in the statistics that show the dramatic growth in the deployment of fiber in the local loop since 1996. RBOC fiber working channels have grown from 17 million in 1996 to 74 million in 2001 – an increase in excess of 300%.<sup>36</sup> Overall, fiber fed DLC constitutes 32.5% of all working channels.<sup>37</sup> Given these facts, there can

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<sup>32</sup> Ineed, SBC in a recent TV commercial touts that it has invested billions in new technology while its UNE-P competitors (allegedly) have not done so.

<sup>33</sup> *See* News Release, *Verizon Communications Reports Solid Results for Fourth Quarter, Provides Outlook for 2002* (Jan. 31, 2002).

<sup>34</sup> *See* News Release, *BellSouth Captures 620,500 DSL Customers and Deploys Broadband Capabilities to More Than 15.5 Million Lines* (Jan. 3, 2002). BellSouth has widely deployed DSL technology even in relatively rural states. According to recent BellSouth statements, 136 of 140 central offices in North Carolina are now capable of support DSL-based services. *BellSouth Makes Progress on North Carolina High-Speed Internet Service*, *The News & Observer*, Raleigh, NC Knight Ridder/Tribune Business News, (Apr. 3, 2002). BellSouth also expects to have in place 2,100 remote terminals in North Carolina by the end of the year. *Id.*

<sup>35</sup> *EchoStar, SBC Forge Powerful TV-Telecom Alliance*, *Satellite News* (Apr. 22, 2002). Even Qwest, which has the most rural territory of the mega-ILECs, and has been the slowest to upgrade its network, can now deploy DSL-based services to 40% of households in its region. Jeff Smith, *A Dream Deferred*, *Rocky Mountain News* (Denver, Co.) (Apr. 1, 2002).

<sup>36</sup> *Trends in Telephone Service*, Table 18.3 (May 2002).

<sup>37</sup> *Id.*; *see also* RHK, *Optical Access: North America*, at 2 (Dec. 2001) (“*RHK Report*”) (reporting that as of 2000, nearly 30% of access lines were supported on DLC.).

simply be no plausible claim that ILECs need more favorable regulatory treatment to deploy fiber to create hybrid copper-fiber loops.

Just as implausible is the ILECs' claim that FTTH is imperiled by the Act's unbundling requirements. *See* BellSouth at 44-46; SBC at 44-46; Verizon at 36. Despite the ILECs' rhetorical arguments to regulators and legislators, they have yet to make actual plans to deploy, or sought funding for, FTTH. "Only BellSouth has implemented an FTTH residential *trial*, and its assessment is that it is still too expensive to deploy on a wide-scale basis."<sup>38</sup> SBC's Chief Technical Officer concurs, observing that "T1 speeds seem to meet a broad range of consumer demands, and at a viable monthly subscription price" while "trench[ing] existing neighborhoods for passive optical fiber" would be "cost[] . . . prohibitive."<sup>39</sup> Instead of ripping out existing plant,

service providers are solving bandwidth bottlenecks by squeezing more functionality out of copper. . . . Small to medium-sized businesses have not yet tapped the full potential of copper with T1 and T3 lines. And carriers, particularly the incumbents, will not rush to swap out their copper infrastructure until customers demand optical capacity.<sup>40</sup>

This is particularly true given that leading vendors are working on improvements to existing DSL technology that will achieve an "order of magnitude increase in access speeds."<sup>41</sup> Because

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<sup>38</sup> *RHK Report* at 5 (emphasis added).

<sup>39</sup> Loring Wirbel, *SBC Shifts Focus From DSL To Passive Optical Nets*, EE Times (Nov. 27, 2001).

<sup>40</sup> IDC, *Passive Optical Networks Market Forecast and Analysis, 2000-2005*, at 18 (Dec. 2001) ("*IDC PON Report*"); *see also id.* at 14 ("The greatest inhibitor to PON development over the forecast period is cost. . . . [C]ost arguments are not low enough to build a strong case for residential PON.").

<sup>41</sup> Broadband and IP Optics, N. Ransom – Chief Technical Officer of Alcatel Americas, Alcatel Telecommunications Review, at 210 (3<sup>rd</sup> Quarter 2001).

of these factors, analysts predict that FTTH's share of *newly added* access lines for the entirety of North America will not reach 1% until 2005.<sup>42</sup>

Deployment of FTTH at this time would also not make sense because the supporting processes necessary to provision next generation broadband applications are not in place. "ILECs . . . lack many of the necessary support systems to deploy and support much in the way of new value-added content on a large scale in the next two to three years." *Broadband 2001 Report* at 66. In short, any attempt to deploy FTTH until the supporting infrastructure is developed, which is at least several years off, would result in the underlying facilities lying fallow.

Further, it is generally recognized that there are no applications that would currently justify FTTH for the consumer market.<sup>43</sup> According to a recent report by the Bush Administration, the reason that acceptance rates for broadband services are not higher appears to be lack of compelling broadband content. *See Bush Administration Officials Detail Broadband Challenges*, Tech Daily (March 5, 2002); *see also Broadband 2001 Report* at 85 ("[E]vidence to date suggests that broadband applications demand remains mostly latent and therefore highly reactive in nature. Customers do not know exactly what they want from broadband applications any more than they knew what they wanted from the World Wide Web in 1993."). Content limitations, of course, have nothing to do with the ILECs' unbundling obligations under the 1996

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<sup>42</sup> *IDC PON Report* at 12.

<sup>43</sup> Notably, none of the "emerging" applications on Table 5 of the ILEC Report even approximates the bandwidth demand implicit in FTTH facilities. Telesurgery and "broadcast quality video conferencing" are the only two "emerging" applications identified in the ILEC Report that require greater than 1 Mbps of capacity and neither is, of course, intended for consumer use.



Act. Rather, they are driven by other issues that mute consumer interest in the service, such as copyright and intellectual property laws. *Id.*

Ironically, other supporters of eliminating unbundling obligations on FTTH confirm the accuracy of these reports of real-world facts showing that FTTH is too costly to be deployed at current levels of demand. For example, rather than showing that FTTH is relatively inexpensive, Corning's comments actually confirm that FTTH is quite costly relative to the revenues it can be expected to generate given existing and emerging applications of FTTH. And as described in the accompanying Clarke-Donovan Reply Declaration, Corning's conclusion that FTTH can economically be deployed to 31 percent of homes rests entirely on a flawed "business case" conducted by Cambridge Strategic Management Group ("CSMG").<sup>44</sup> To begin with, CSMG makes no attempt to model the costs of wide-spread FTTH deployment, but instead analyzes only a cream-skimming scenario in which FTTH is constructed only to relatively high income households that are already reachable with short copper loops and DSL. Clarke-Donovan Reply Dec. ¶ 14. Thus, even if CSMG's other assumptions withstood scrutiny, it would clearly be contrary to the public interest to gut provisions of the Act that allow CLECs to compete broadly for all customers so that ILECs can deploy FTTH to a subset of the most affluent customers that already can obtain the highest bandwidth DSL service.

But CSMG overstates even the number of customers that can be cherry-picked in this fashion by relying on a series of assumptions that overstate the revenues that could be earned by FTTH. For example, CSMG assumes, without any support, that ILECs providing FTTH would increase their market share of video programming services from 3% (in 2003) to 40% (in 2013)

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<sup>44</sup> Corning's separate conclusion that unbundling obligations impair the "business case" for broad deployment of FTTH is refuted below. *See infra* Part III.B.2.d.

and be able to *increase* prices from \$57 per month to \$82 – a level higher than cable and DBS providers. Clarke-Donovan Reply Dec. ¶ 19. But CSMG offers no support for these assumptions, which defy the normal notion that increased competition leads to *lower* prices. *Id.* Similarly, CSMG assumes that “other revenues” – which, while never explained in detail, are said to include items like “CPE and set-top box fees” – will (i) increase by 250% over the 10 year study period, (ii) have a steadily increasing “take rate,” and (iii) earn consistently huge margins. *Id.* ¶ 20. Finally, in addition to these aggressive and unsupported assumptions about revenue increases under FTTH, CSMG independently assumes that ILECs will be able to sustain gross margins of 70% for voice, 56% for data, 50% for video and 70% for “other” services. *Id.* ¶ 22. CSMG provides no support for these enormous profit margins and they are facially implausible. *Id.*

And at the same time it predicts substantially inflated revenues, CSMG also adopts improper assumptions that understate the true costs of deploying FTTH. There is no indication in the materials provided by Corning that CSMG reflected any of the additional interoffice costs that ILECs would have to incur to offer 20 Mbps data and video services and multiple derived POTS lines. *Id.* ¶ 28. CSMG appears to ignore whole categories of equipment that will be necessary to provide FTTH, such as the optical “line cards” necessary to drive this loop, Voice Gateways and ATM switches needed to handle the voice and data services carried by the FTTH network, and the video switching encoding and transmission facilities that are necessary. *Id.* ¶ 25. Likewise, CSMG fails to account for a substantial portion of drop distribution plant – which accounts for a significant percentage of overall outside plant – in its analysis. *Id.* ¶ 26. And while CSMG does account for the placement costs of certain outside plant, those costs are

understated because CSMG assumed a much higher percentage of aerial plant than is appropriate. *Id.* ¶ 27.

For these reasons, the ILECs artfully craft their advocacy and stop short of actually making any *promise* to deploy FTTH if broadband unbundling obligations were eliminated. For example, Verizon states (at 36) that unbundling for next-generation broadband services is “even more problematic than DSL but fails to commit to the “additional deployment of fiber in the loop” should existing “regulatory intrusions” be eliminated. Indeed, Verizon has backed out of its commitment to deploy FTTH in Pennsylvania, stating that “giving customers [higher speeds] might even be a waste of bandwidth, or transmission capacity, since few uses of the Internet can fully exploit [them].”<sup>45</sup> Similarly, BellSouth says (at 46) that “no investor will incur the risks and spend billions of dollars on infrastructure that will then be turned over to one of its competitors at below cost pricing,”<sup>46</sup> but it makes no representation that it would in fact incur such risks if unbundling obligations were eliminated.

Put simply, current economic and technical conditions offer no realistic possibility that the ILECs would deploy FTTH anytime soon, even with the absence of section 251(c)(3) unbundling obligations. Thus, there is no reason to make unbundling decisions for today’s marketplace based upon a technology that will not be available at least for many years to come. Indeed, the Commission has stated that this review of ILEC unbundling obligations is intended to “remain[] *current* and faithful to the pro-competitive, market-opening provisions of the 1996 Act in light of our experience over the last two years, advances in telecommunications

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<sup>45</sup> Akweli Parker, *Verizon Backs Out of Promises in Pennsylvania*, *Official Charges*, The Philadelphia Inquirer (March 29, 2002).

<sup>46</sup> As shown below, there is no reason to believe that proper allocation of TELRIC would lead to “below cost pricing” for FTTH as a UNE.

technology and other developments in the markets for telecommunications services.” *Notice* ¶ 1 (emphasis added). Thus, “the Commission should fashion its *current* unbundling rules in light of the conditions *that exist in the marketplace today or are expected in the near future* and the investment that ILECs are in fact making or might make to meet consumer demand.” Willig Dec. ¶ 166 (emphasis added). If future investigations demonstrate that sufficient demand is likely to develop or that it would be economically feasible for ILECs to deploy FTTH, the Commission can assess the impact of broadband unbundling of FTTH on ILEC investment incentives at that time. *See supra* Part III.A.

This analysis also answers the concerns expressed in *USTA* regarding the possible “costs” of unbundling. The Court stated that the Commission should address the ILECs’ argument that unbundling “reduce[s] or eliminate[s] the incentive for an ILEC to invest in innovation (because it will have to share the rewards with CLECs).” *USTA*, 290 F.3d at 424. Notably, the Court did not – and, indeed, could not – find that the ILECs’ assertions were correct and that unbundling in fact materially impedes their incentive to invest in new facilities. Rather, it found only that the Commission had failed to “confront[]” the issue. *Id.* at 425.

The evidence now before the Commission goes well beyond the level identified by the Court. The Court made clear that the Commission could rely on a qualitative assessment of the impact of unbundling on ILEC investment incentives and that it was not required to rely on “multiple regression analyses.” *Id.* But the assembled record does in fact contain “multiple regression analyses” that confirm the Supreme Court’s conclusion that unbundling can be expected to increase ILEC investment incentives. *See Verizon*, 122 S. Ct. at 1676 n.33. In his initial declaration, Professor Robert Willig, using both the “reduced-form” and “structural-form” relationships, demonstrated that the ILECs’ claim that the availability of “cheap” UNE-P prices

stifle ILEC investment was statistically invalid. Willig Dec. ¶ 121. Rather, the econometric results provide support for the contrary conclusion – *i.e.*, that easing CLEC entry with relatively low UNE-P prices actually *encourages* ILEC investment. *Id.* ¶ 119.

In his accompanying Declaration, Dr. Willig extends and strengthens those results using an expanded data set and employing in complementary fashion “reduced-form” and “structural-form” relationships. Willig Reply Dec. ¶¶ 94-102 & Technical Appendix. The expanded econometric results provide support for full statistical significance for the hypothesis that easing CLEC entry with lower UNE-P prices encourages ILEC investment. *Id.* ¶ 99. At the same time, the econometrics establish at better than the standard 5% level of statistical significance the rejection of the contrary hypothesis advanced by the ILECs that easing CLEC entry with lower UNE-P prices discourages ILEC investment. *Id.*

Conversely, denying CLECs access to current broadband facilities today – especially the NGDLC capabilities that are becoming nearly ubiquitous – would impose substantial public interest harms. As the Commission explained to the D.C. Circuit, the ILEC’s local “loops” remain “a quintessential bottleneck facility for competing telecommunications carriers.” Brief for Respondents, No. 00-1002, at 22 (D.C. Cir. filed Nov. 2, 2000). Until the incumbents’ voice monopolies are broken, existing access regulation will remain necessary to prevent them from using their control over facilities used simultaneously to provide both voice and advanced services to “perpetuate their monopolistic dominance” of “existing” markets. *Id.* Indeed, as the Supreme Court has just held, the “provisions of the Telecommunications Act . . . were intended to *eliminate the monopolies* enjoyed by the inheritors of AT&T’s local franchises; this objective was considered both *an end in itself* and an important step toward the Act’s other goals of

boosting competition in broader markets and revising the mandate to provide universal service.” *Verizon*, 122 S. Ct. at 1654 (emphasis added).

The substantial record amassed over the past two years clearly demonstrates that, without access to all the transmission capabilities of the loop, including the high frequency portion, CLECs will be foreclosed altogether from competing for the increasing number of customers that want voice and data services over a single line. AT&T at 95-96; Willig Dec. ¶ 185. And given that more and more customers are purchasing ILEC DSL-based services provisioned over NGDLC facilities – and that ILECs typically require customers to use the ILECs’ narrowband voice service on the same line over which they provide a DSL-based service (*see infra* Part VII) – increasing numbers of customers will be effectively walled off from competition.

Worse yet, even as to the declining numbers of customers willing to buy a voice-only offering, CLECs would be placed at a significant cost disadvantage *vis-à-vis* ILECs. The Commission’s Synthesis Model and cost models used by many State commissions already set loop rates assuming the existence of “clean loops” (*i.e.*, loops without bridge taps and load coils) and that fiber feeder is used on all loops over 18,000 feet. Willig Dec. ¶ 162. Some States have gone farther and assumed that TELRIC requires all feeder plant to be fiber regardless of loop length. *See Verizon*, 122 S. Ct. at 1678.<sup>47</sup> Thus, TELRIC rates *already* reflect the costs of a network that can support DSL-based service to *every* customer. Willig Dec. ¶ 162. But if the ILECs’ proposals are granted, CLECs will be put in the competitively untenable position of having to pay for loop capabilities that they would not be able to use.

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<sup>47</sup> *Id.* (“The New York Public Service Commission, for example, used the cost of the more expensive fiber-optic cable as the basis for its TELRIC loop fixed rates, notwithstanding the fact that competitors argued that the cheaper copper-wire loop was more efficient for voice communications and should have been the underlying valuation for loop rates.”).

Denying CLECs access to the high-frequency portion of loops would further impede voice competition, because, as AT&T showed, voice services can be provided over the high frequency portion of the loop. Huels Dec. ¶ 64 & n.18. The availability of such “derived” voice lines represents one of the greatest competitive threats to the ILECs’ continuing local dominance and thus could generate great public interest benefits. Such offerings could not be made, however, if the Commission adopted the ILECs’ self-serving proposals and denied CLECs the ability to access to the high frequency portion of the loop.

Unbundling obligations are also necessary to promote intramodal broadband competition. As explained in AT&T’s initial comments (at 72-77), the ILECs’ unique position as the dominant providers of the local telephone facilities used to provision narrowband Internet access services gives them anticompetitive incentives to resist the deployment of cost-based broadband services. This is a matter of basic economics. ILECs simply lack the incentive to deploy efficient levels of broadband services and to match the prices offered by competitors, because broadband services “cannibalize” existing high margin services currently provided by ILECs. Willig Dec. ¶¶ 173-74. Thus, when the ILECs deploy broadband, there can be a “ripple effect” – customers cancel second lines or ISDN services and diminish the ILECs’ overall profits. *See Communications Daily* at 2 (Feb. 21, 2000) (quoting Robert Pepper, Chief of the Commission’s Office of Plans and Policy); *see also* Organization for Economic Co-Operation and Development, Working Party on Telecommunication and Information Service Policies, *Developments in Local Loop Unbundling*, at 13 (May 2, 2002) (“OECD Unbundling White Paper”).

This is also the conclusion reached by Goldman Sachs after a thorough investigation of the economics of DSL.

[A] negative side effect of adding a DSL subscriber is the potential loss of a second line that the customer had previously subscribed to. *SBC estimates that as much as one-half of customers with second lines that sign up for DSL service disconnect their second lines, Verizon estimates that this figure is closer to three-quarters.* Although on the surface, adding a \$50 revenue stream per month, while sacrificing a \$25 per month second line revenue stream may seem like a positive tradeoff, the underlying economics may not lead to the same conclusion, particularly if we are only at the first-year effect. Second lines generate only \$25 per month in revenue and come at a very low incremental cost to the provider, implying very high returns. Alternatively, DSL requires significant upfront acquisition costs as well as infrastructure costs. We estimate the key to this tradeoff is the length of time that a DSL customer is retained. For instance, with low churn assumptions, a DSL customer can over time produce very healthy returns on capital and therefore outweigh the loss of a second line voice customer. With higher churn, DSL's payback period is longer, lowering returns on capital and effectively making the cannibalization of second voice lines slightly more harmful. *A DSL subscriber often comes at the expense of a disconnected second line, which means \$25 in high-margin revenues are lost.*

Goldman Sachs, *Telecom Services*, at 15 (June 11, 2002) (emphasis added) ("*Goldman Sachs Report*"). And this is precisely the reason why that ILECs claim that the price of DSL – despite the ILECs' recent major price hikes – is "too low." Vikas Bajaj, *Phone, Broadband Prices Too Low, Verizon Exec Says*, Dallas Morning News (June 5, 2002) ("Digital subscriber lines, which cost about \$50 a month today, should be 40 percent to 50 percent more expensive, [Verizon's Vice Chairman and President] told reporters at a news conference.").

In the past, when there were multiple carriers offering DSL services, the ILECs had no alternative but to deploy broadband services aggressively and to keep prices low. Where there was both intramodal and intermodal competition, the ILECs recognized that failure to deploy DSL-based services would not allow them to preserve monopoly profits derived from existing services because their customers would simply chose the broadband offerings of their competitors and then cancel the ILEC-provided second lines or ISDN service. Willig Dec. ¶¶ 175, 177. But as the "data LEC" industry began to crumble and this competitive constraint



disappeared, the ILECs again began to act on their basic incentives.<sup>48</sup> *Id.* ¶¶ 177, 206-07. They uniformly raised the prices of their lowest bandwidth DSL offerings by 25 percent, with some ILECs maintaining or slightly lowering the price of their highest bandwidth offerings (but still setting them at a level in excess of the rates charged for cable modem services). *See* Willig Wireline BB Classification Dec. ¶ 38 & n.14.<sup>49</sup> Thus, the ILECs raised prices for the “entry level” DSL services that are most likely to attract current narrowband users (*i.e.*, the most likely substitutes for narrowband), but lowered the price only for users who desire maximum speed and who would be most likely to be attracted to the relatively high-speed, moderately-priced service offered by the cable companies (although the ILECs still found it profitable to maintain prices well in excess of cable modem services).

In sum, it is obvious that vibrant intramodal DSL-based competition is necessary to check the ILECs’ market power by giving consumers voice/DSL alternatives from multiple carriers that would not have to match the ILECs’ price increases. Willig Dec. ¶ 189. As the Supreme Court found in *Verizon*, 122 S. Ct. at 1676 n.33, it is “commonsense . . . that so long as TELRIC brings about some competition, the incumbents will continue to have incentives to invest and improve their services to hold on to their existing customer base.” *See also OECD White Paper*

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<sup>48</sup> Early on in the deployment of DSL, the ILECs had a very real incentive to deploy DSL as a means to avoid reciprocal compensation (“RC”) payments associated with dial-up Internet access. Not only did deployment of DSL provide retail DSL revenues but it also eliminates the potential RC payments generated by high use customers. So despite the loss of second line revenues the financial equation was very favorable. This added incentive to deploy DSL, however, was largely eliminated when the Commission capped ILEC payments for dial-up Internet access. *See generally ISP Recip. Comp. Order.*

<sup>49</sup> The ILECs also charge more than their one remaining data LEC competitor, Covad. *See* [http://www.covad.com/companyinfo/pressreleases/pr\\_2002/061902a\\_press.shtml](http://www.covad.com/companyinfo/pressreleases/pr_2002/061902a_press.shtml) (offering DSL service for \$39.95 per month).

at 12 (concluding that “prices for broadband are lower, and service levels are higher, in countries where competition is highest”).

**1. Neither Existing Levels of Intermodal Competition nor Principles of Regulatory Parity Permit the Commission to Eliminate the Act’s Core Unbundling Obligations for Existing Broadband Facilities.**

By definition, there can be no claim that unbundling obligations have somehow “impaired” ILEC investment incentives with regard to existing facilities. Recognizing this, the ILECs now claim that these unbundling obligations should be overridden because of the broadband competition that they face from facilities-based alternatives. Thus, they renew their familiar plea for “regulatory parity,” asserting that it is “unfair” to subject them to costly regulation when cable operators face little regulation. *See* BellSouth at 37-44; SBC at 22-23; Verizon at 72-76.

At the outset, the ILECs’ argument is foreclosed by the legislative history of the Act. As explained in detail *infra* in Part VII.A.4, Congress knew and understood the emerging technologies that were being developed and deployed by the ILECs, cable companies, and wireless companies when it required ILECs to unbundle their networks. In fact, Congress specifically considered and rejected a “regulatory parity” proposal prior to the enactment of the 1996 Act.

In all events, it is simply untrue that existing levels of intermodal competition are sufficient to check ILEC market power. Indeed, there can be little debate that the ILECs are dominant providers of broadband services to large businesses,<sup>50</sup> and the ILECs’ principal

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<sup>50</sup> AT&T has demonstrated the falsity of the ILECs’ argument that they lack market power in large business and mass market “broadband” services at length in its Comments and Reply Comments in CC Docket No. 01-337 (filed March 1, 2002 and Apr. 22, 2002 respectively). AT&T summarizes its rebuttal here and incorporates those filings by reference.

evidence to the contrary is simply irrelevant. Specifically, the ILECs say that their small share of the *national, long distance* ATM and Frame Relay markets shows that they do not control bottleneck facilities necessary to provide broadband services to businesses. *See Verizon* at 21 (citing ILEC Report at V-26-27). But as a matter of pure logic, the ILECs' market share in services that merely use high-capacity local loops as one of several inputs, says nothing at all about whether there are any alternatives to those local loops and whether CLECs would be impaired without access to them. Moreover, the obvious reason why the ILECs have a low market share of "national" Frame Relay and ATM services is that they are still largely prohibited by section 271 from providing such services. Tellingly, when their market share is examined on a local basis, the ILECs control *more than 90%* of the Frame Relay and ATM market – and their market dominance has been increasing. *See IDC, U.S. Packet/Cell-Based Services Market Forecast and Analysis, 2000-2005, at 34, 69 (2001).*

On the issue that is actually relevant to this proceeding – whether other carriers have deployed (or are able to deploy) broadband loops capable of serving large businesses – the record is clear that CLECs have not been able to make significant progress in constructing their own facilities in order to bypass ILEC facilities, and that this situation is not likely to change in the future. As AT&T demonstrated in its Comments (at 123-58) and as further detailed in Part VI.B. below, CLECs face substantial hurdles in attempting to deploy their own high-capacity loops and transport facilities, even when they would be used to serve high-volume business locations. And even in the limited circumstances where building such facilities could theoretically be justified, (i) practical considerations such as the need to obtain rights of way; (ii) collocation and building access; (iii) customers' resistance to moving operating services; and (iv) the CLECs' inability to build new facilities in time to meet customers' immediate needs for

service all independently and materially “impair” new entrants’ ability to use their own facilities to offer service. These fundamental engineering and economic impairments are confirmed by verified record evidence that demonstrates both the limited extent to which CLECs have been able to deploy high-capacity transmission facilities and their continuing high degree of dependence on ILEC last-mile facilities to serve to their largest customers. *See Verizon*, 122 S. Ct. at 1662.

These real-world facts are also confirmed by New York PSC. After undertaking a comprehensive review of Verizon’s high-speed services, the New York PSC found that “Verizon continues to be the dominant provider of high-capacity loops used to provide services to large volume customers.” New York at 5. Overall, it found Verizon’s network serves 7,354 buildings in LATA 132 over fiber while CLECs serve fewer than 1,000 buildings.<sup>51</sup> If high-capacity loops and transport facilities serving large businesses are not generally available outside of the incumbent’s network in New York – the state in which the competitive process has advanced the farthest and where large business locations are highly concentrated – *a fortiori*, they are not generally available in the rest of the country.

Only the details – not the conclusions – change with regard to mass-market broadband services. As discussed above, the enormous price increases imposed by the ILECs after the collapse of the data LEC industry are the complete answer to the ILECs’ claimed lack of market power. Analysts widely agree that it was the recent, precipitous decline in intramodal

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<sup>51</sup> *Opinion and Order Modifying Special Services Guidelines for Verizon New York Inc., Conforming Tariff, and Requiring Additional Performance Reporting*, Case Nos. 00-C-2051, at 7 (NYPSC June 15, 2001).

competition that permitted the ILECs to raise prices for their high-speed Internet access services.<sup>52</sup>

More broadly, intermodal competition has not been sufficient to check ILEC market power because alternative broadband providers are not ubiquitous, and in many instances their services have not gained much consumer acceptance. Willig Dec. ¶¶ 204-08. For example, while touting the fact that satellite-based high-speed Internet access services are “available in all 50 states,” Verizon at 18, the ILECs ignore that satellite-based services have not yet lived up to expectations. Satellite-based services, which today are generally high-speed in only one direction, have attracted few subscribers – as the ILEC Report acknowledges. See ILEC Report at IV-21 (“Subscribership for broadband satellite remains low.”).

And this is not likely to change soon. Cf. *id.* The most prominent current satellite-based broadband offering, StarBand, is no longer viable. EchoStar has frankly called its investment in the StarBand venture – which to date has attracted only 40,000 subscribers despite being available nationwide – a “\$100 million mistake”<sup>53</sup> and has stopped marketing StarBand high-

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<sup>52</sup> See Broadband Intelligence, Inc., *Competitive Analysis of DSL and Cable Modems: Quarterly Report Analysis – Q3 2001* (2001) (“*Broadband Intelligence Report*”) at 1 (“[T]he first half of this year witnessed a major shakeout among DSL wholesalers and independent ISPs. *In its wake came a reversal of last year’s downward pricing pressure.*”) (emphasis added); IDC, *US DSL Market Shares by Vendor, 1H01*, at 2 (Aug. 2001) (“Now that upstart competitors, such as defunct NorthPoint Communications, no longer threaten the ILECs, the race for DSL subscribers has slowed . . . . The ILECs now dominate the US DSL market, and with a dearth of competition, the ILECs no longer have an incentive to aggressively market and deploy DSL service.”); Salomon Smith Barney, *Communications Components*, at 2 (Nov. 23, 2001) (“Perhaps most importantly, the fall of the competitive local exchange carriers (CLECs) has given the ILECs room to retire to ‘Bell Standard Time’ after years of trying to move in sync with ‘Internet Time.’ The result has been lower than expected DSL rollout rates in the US. In contrast, the worldwide ADSL sky has not fallen. Deployment has gone much more smoothly in several regions such as South Korea, Japan, and most of Europe.”).

<sup>53</sup> *Starband Accepts Resignation of EchoStar Board Members*, Communications Daily (May 8, 2002).

speed Internet access service.<sup>54</sup> Instead, EchoStar has begun cross-marketing SBC's DSL-based services to its customers.<sup>55</sup> StarBand is now attempting to shift focus and market to small businesses, but analysts question whether the enterprise can survive, given the limitations of current satellite-based Internet access capabilities.<sup>56</sup> Similarly, WildBlue, which had raised \$100 million from investors to provide high-speed Internet access to customers in rural parts of the United States, has put all its plans to build and deploy satellites on hold.<sup>57</sup> Just recently, Pegasus Communications announced that it has given up on aggressively pursuing satellite-based Internet access after attracting only 5100 subscribers and suffering a \$15.7 million operating loss in fiscal 2001.<sup>58</sup> In sum, satellite broadband service is "[c]haracterized by difficult, expensive installations, notoriously poor service, and suspect performance, [so that] the service meant for anyone who can't get cable or DSL has ceased to be a serious option."<sup>59</sup>

The ILECs similarly overstate the competition offered by fixed wireless carriers. See BellSouth at 42-43; Verizon at 19-20; ILEC Report at IV-21.<sup>60</sup> Fixed wireless technology has

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<sup>54</sup> Andy Pasztor, *EchoStar Will No Longer Offer Web Via Satellite*, The Wall Street Journal, at B5 (Apr. 5, 2002).

<sup>55</sup> See Margaret Kane, *SBC Connects With DSL Subscribers*, CNET News.com (Apr. 18, 2002).

<sup>56</sup> See Yuki Noguchi, *StarBand Shifts Market Focus; Company Turns to Small Businesses*, The Washington Post, at E5 (Apr. 5, 2002).

<sup>57</sup> See Jennifer Beauprez, *WildBlue's Net Satellite On Hold For Lack Of Funds*, The Denver Post, at C1 (March 7, 2002).

<sup>58</sup> Communications Daily at 10 (May 3, 2002).

<sup>59</sup> Brad Grimes, *Ditch Your Dial Up*, PC World (Feb. 27, 2002) (available at <http://www.pcworld.com/features/article/0,aid,73865,pg,3,00.asp>).

<sup>60</sup> BellSouth also touts next generation mobile wireless services as an alternative broadband pipe. BellSouth at 41-42. But such services will not be offered in the U.S. for years and there is no evidence that they will be viewed by consumers as substitutes for the ILECs' DSL offerings or offered ubiquitously. Should these facts change at a later date, the Commission will of course be  
(continued . . .)

failed to gain even a toehold in the market – as the Supreme Court itself has recognized. *See Verizon*, 122 S. Ct. at 1677 n.35. Late last year, AT&T Wireless shut down its fixed wireless network, with most of its subscribers switching to ILECs, and AT&T Wireless wrote off \$1.3 billion of its fixed wireless investment and sold its fixed wireless business.<sup>61</sup> Contrary to the ILEC Report’s claims (at IV-21), Sprint and WorldCom, the largest holders of multichannel multipoint distribution services (“MMDS”), have put their initially aggressive plans to deploy fixed wireless systems on hold.<sup>62</sup> MMDS also suffers from line-of-sight restrictions. WorldCom, HAI Report at 78. Similarly, the largest holder of Local Multipoint Distribution Service (“LMDS”) spectrum in the United States,<sup>63</sup> XO Communications, is currently negotiating with its bondholders for approval of a pre-packaged bankruptcy arrangement and could be facing liquidation.<sup>64</sup> Three other prominent LMDS fixed wireless companies,

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(... continued)

able to assess at that time what impact the availability wireless data services might have on ILEC unbundling obligations. However, in light of the relative failure of satellite and fixed wireless services to date, it would be naïve at best to simply assume that because this technology has the *potential* to compete in some respects with established ILEC DSL service, it will in fact realize that potential anytime soon.

<sup>61</sup> *See AT&T Wireless Shuts Down Fixed Wireless Network*, The Dallas Morning News Online (Jan. 3, 2002); Peter J. Howe, *A Fixation on Fixed Wireless*, The Boston Globe (Feb. 11, 2002).

<sup>62</sup> As a recent article (more recent than the sources cited by the ILEC Report) states, “[f]urther deployment of multichannel multipoint distribution service in the United States by WorldCom Inc. and Sprint Corp. is on indefinite hold unless either provider can find a second-generation technology that lives up to their expectations. WorldCom and Sprint ceased service expansion last year after launching 13 markets and 14 markets, respectively.” Hillary Smith, *WorldCom, Sprint on MMDS Hold in Search of Infrastructure*, RCR Wireless News (Apr. 22, 2002); *see also* Jim Barthold, *Restarting Fixed Wireless: We’re Still Waiting*, Telephony (Feb. 11, 2002).

<sup>63</sup> New Paradigm Resources Group, *CLEC Report 2002*, Ch. 2, at 10 (2002) (hereinafter “NPRG 2002 CLEC Report”). XO Communications has licenses covering 95 percent of the population of the 30 largest U.S. cities. *Id.*

<sup>64</sup> <http://www.totaltele.com/view.asp?ArticleID=52175&pub=tt&categoryid=0>.

Advanced Radio Telecom (“ART”), Winstar, and Teligent have also filed bankruptcy petitions. As a result, fixed wireless vendors are shuttering their doors.<sup>65</sup>

Even if carriers find a way to deploy fixed wireless profitably, it will never be ubiquitous. Because of line-of-sight requirements, the “maximum penetration of fixed wireless services in larger markets will be limited to five to ten percent.”<sup>66</sup> Overall, the analysts predict that fixed wireless to have only a 7% broadband “market” share by 2007. Yankee Group, *Residential Broadband: Cable Modem Remains King*, at 1 (April 2002).

To be sure, cable operators have aggressively deployed broadband networks and compete head-to-head with ILEC residential DSL offerings in some areas. But the central point, as even the ILECs’ own economists concede, is that “the geographic scope of the market for broadband access is local.” Declaration of Robert Harris, CC Docket No. 01-337, ¶ 6 (attached to Reply Comments of BellSouth, filed Apr. 22, 2002).

Critically, cable does not yet provide Internet access services in all residential areas. And as the Commission has recognized, what is true “for any technology” is particularly true for broadband, a technology in the early stages of development: deployment “is not uniform across the nation.” *Second Section 706 Report* ¶ 1 (2000). Thus, about 40% of all U.S. zip codes have only a single high-speed service provider or no high-speed service provider at all. *See Third Section 706 Report*, App. C, Table 9 (2002); *see also* NCTA 2001 Internet/Broadband Availability Survey Report (Dec. 2001) (reporting that 42% of respondents had the choice of only one broadband provider); Reply Comments of WorldCom, CC Docket No. 01-337, at 3-4

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<sup>65</sup> *Hybrid Networks Folds*, Communications Today (March 29, 2002).

<sup>66</sup> Declaration of Daniel Kelley, CC Docket No. 02-33, ¶ 40 (attached to Comments of WorldCom, filed May 3, 2002).



(filed April 22, 2002) (explaining that it is unlikely that as many as 60% of all Americans have multiple broadband options). And in some residential areas, cable service is not available to anyone. See *Third Section 706 Report*, App. C, Table 9. For example, “forty-five percent of Californians that live in cities with broadband service have DSL service as their only broadband option.” See Comments of California, CC Docket No. 02-33, at 28 (filed May 3, 2002). The McKinsey-JP Morgan study relied on by the ILECs likewise estimates that only 33% of consumers had a choice of DSL and cable modem services and that 38% had DSL as their only option. *Broadband 2001 Report*, Chart 25.

And, as shown above, even where ILEC broadband services compete head-to-head with an alternative provider, that does not mean that the alternative provides a competitive constraint. Indeed, the ILECs still price their services above competitive levels.

The ILECs also cannot side-step these facts on the grounds that deregulation of access to the high frequency portion of the loop is necessary for the sake of “regulatory parity.”<sup>67</sup> Regulation is not merely appropriate but necessary where a carrier controls facilities that give it the opportunity to restrict output or raise rivals’ costs in anticompetitive ways. Thus, the Commission has repeatedly held that, the “costs” of “regulation” are “appropriate” to prevent the exercise of “market power in [a] relevant market.” *AT&T Non-Dominance Order* ¶ 27.

In stark contrast, regulating access to cable facilities would be clearly inappropriate under a consistent market power framework. Unlike ILEC second lines, the high-speed services offered by cable providers are complementary to their video programming and do not

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<sup>67</sup> In this regard, the ILECs are renewing the regulatory parity arguments that they first advanced in the context of the Wireline Broadband Classification Proceeding (CC Docket No. 02-33). These arguments are addressed fully in AT&T’s Comments and Reply Comments filed in that proceeding. Accordingly, AT&T only summarizes those comments here and incorporates them by reference.

cannibalize existing cable offerings. As a result, increasing broadband deployment and revenues is unambiguously positive for these carriers. These alternative providers therefore have every incentive to deploy broadband services broadly and to price them competitively in order to attract customers away from the ILEC-provisioned services. Willig Wireline BB Classification Dec. ¶ 102.

Further, unlike the ILECs, cable operators have no monopoly in their core markets that can be leveraged into nascent broadband services. Cable operators' video services are currently subject to substantial competition from DBS and other competitors that have no need for access to cable facilities and that are outpacing cable in attracting new video programming subscribers, even without viable broadband Internet offerings. Driven by DBS, non-cable video programming providers already serve approximately 23% of customers nationwide. Four out of five new multichannel video customers now are choosing DBS over cable,<sup>68</sup> and almost one-half of existing DBS subscribers are former cable customers.<sup>69</sup>

And this competition is ubiquitous. Two existing facilities-based DBS providers have the ability and capacity to serve virtually each and every cable subscriber in the United States. Thus, in *every* local market, there are at least *three* successful facilities-based video programming competitors with demonstrated ability to provide service profitably.<sup>70</sup>

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<sup>68</sup> See Comments of NCTA, CS Docket No. 01-129, at 8 (August 2, 2001).

<sup>69</sup> See J.D. Power & Assocs., *2001 Syndicated Cable/Satellite TV Customer Satisfaction Study*, at 79 (Sept. 2001).

<sup>70</sup> And in many markets there are several additional competitors as well, including C-Band, MMDS, and SMATV operators, broadband overbuilders such as RCN and Knology, ILECs and leading electric and gas utilities.

Finally, and in all events, the ILECs have simply failed to establish the necessary factual predicate for their regulatory parity claim – *i.e.*, that they currently bear more regulatory costs than their cable competitors. It is simply not true, as BellSouth (at 39) claims, that cable companies are not subject to “any regulatory impediments.” *See also* Verizon at 73-76. Cable companies must comply with local franchising requirements and pay billions of dollars in annual franchise fees.<sup>71</sup> They must build and *donate* “institutional networks” to franchising authorities. They are subject to “must-carry,” PEG, and other regulations that require them to share their networks – and, unlike the ILECs’ network sharing obligations, these cable sharing obligations are uncompensated. *See* 47 U.S.C. §§ 531-32, 534-36. The ILECs face no similar requirements and also receive substantial subsidization for their loop plant costs. Thus, incumbents have no basis to claim that they are on the short end of the regulatory stick.

**2. There is no Legal or Economic Justification for the ILECs Proposed “New Facilities” Exception to the Act’s Unbundling Requirements.**

The ILECs also contend that “new” facilities should be freed from the Act’s unbundling obligations. But in ILEC-speak, “new” does not really mean new. Rather, as SBC’s comments make clear, “new” means “all of the fiber facilities and attached electronics that support packetized transmission and packet services.” SBC at 46. Thus, even *existing* ILEC network facilities used to provide transport for traffic in the high frequency spectrum would be considered “new” and thus freed from any unbundling obligations under the ILECs’ proposals. *Id.* at 20 (“[T]he Commission should take off the table all investment in packet technologies and networks.”).

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<sup>71</sup> *See* Roll Call, July 23, 2001 (statement of Rep. John Conyers and Chris Cannon); *see also* Comments of AT&T, *Request for Comments Deployment of Broadband Networks and Advanced Telecommunications*, Docket No. 011109273-1273-01 (National Telecommunications and Information Administration, Department of Commerce) (Dec. 19, 2001).

The basis for this astonishingly overbroad claim is that “there is no aspect of this packet network that cannot be deployed by CLECs on the same basis as by ILECs, and therefore no reason to conclude that CLECs are impaired without access.” *Id.* at 47. As explained in detail below, this is manifest nonsense, both with respect to existing to NGDLC facilities and even any future deployment of FTTH (or in SBC’s parlance, BPON) networks. Nor is it true, as SBC claims (at 51-53 & Att. C), that such unbundling would imperil “new” broadband networks by forcing the ILECs to make unnecessary and/or expensive modifications to their networks to accommodate multiple carriers.

Finally, the ILECs fall back on their claim that unbundling inhibits them from making broadband investments. In reality, however, this is not an attack on unbundling *per se*, but only upon the TELRIC methodology that is used to determine the rates that may be charged competitors for access to their network elements. Not only is this “investment disincentive” argument contrary to basic economics, but it has now been foreclosed by the Supreme Court.

**a. CLECs lack the ILECs’ economies of scale and scope and cannot construct “new” facilities in a manner comparable to the ILECs.**

The ILECs claim that CLECs are not “impaired” with respect to “new” fiber deployment because “the CLEC stands – today – in exactly the same position as the ILEC.” SBC at 17. This assertion is the sheerest fantasy.<sup>72</sup> And, of course, the ILECs’ proposed rule is actually much broader than their stated rationale, because it would include already deployed broadband facilities. *See id.* at 20, 46-47. Either way, the ILECs’ claim is nonsense, because, as the

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<sup>72</sup> Taken to the extreme, the ILECs could raise this argument with respect to any “new” investment. The ILECs (except for SBC) do not claim that CLECs are not impaired if they elected to deploy a “new” copper cable. But other than the difference in the unit cost of the copper cable and fiber cable, the impairments are little different: rights of way are equally hard to obtain, the ground is equally difficult to trench, and franchise fees are just as discriminatory.

Supreme Court found, the ILECs have “an almost insurmountable competitive advantage,” especially with respect to “the most costly and difficult part of [their networks] . . . the ‘last mile’ of feeder wire, the local loop, to the thousands (or millions) of terminal points in individual houses and businesses.” *Verizon*, 122 S. Ct. at 1662.

Contrary to the ILECs’ claims,<sup>73</sup> the incumbents enjoy huge advantages in deploying even what could loosely be called “new” NGDLC loops. It is critical to recognize in this context that the NGDLC loop architecture supports both data and *voice* services over which the ILECs unquestionably have a dominant position. Moreover, as explained above and in AT&T’s Comments (at 81-82), the ILECs themselves have claimed that it is economic for ILECs to deploy NGDLC architecture *solely* on the basis of the enormous cost savings the ILEC achieves in connection with providing existing voice services. Once fiber feeder is deployed, the ILECs also acknowledge that cost of the additional electronics necessary to support DSL services is “modest.”<sup>74</sup> CLECs, which lack the ILECs’ huge embedded customer base and the ubiquitous ILEC networks that were designed to be used by a single provider, enjoy no comparable scale efficiencies.

Further, the record shows that ILECs enjoy substantial advantages over CLECs even as to the costs of deploying fiber feeder plant. AT&T at 116-17; Fea-Taggart Dec. ¶¶ 12-16. The ILECs’ current and planned NGDLC investments are *incremental* to their existing monopoly networks, and consist largely of modifications or upgrades to the feeder portions of existing loops, principally replacing existing copper feeder with fiber feeder. See Willig Dec. ¶ 193. In

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<sup>73</sup> See, e.g., Qwest at 43 (“[T]he ILECs have no scale advantages when they roll out these new networks.”).

<sup>74</sup> See Duane Ackerman, *Remarks at the Goldman Sachs Communicopia Conference* (Oct. 3, 2001).

these instances, the ILEC typically installs the “new” fiber as an “overlay” that rides on top of its existing feeder.<sup>75</sup> The ILEC therefore enjoys substantial advantages over CLECs, because it can use its existing trenches, structures, conduits and rights of way.

And as shown in detail in AT&T’s initial comments (at 133-34, 190-203) and discussed more fully below in Part VII, unlike the ILECs, CLECs cannot deploy the electronics necessary to support DSL services in an NGDLC configuration at anything approaching a “modest” cost. Moreover, CLECs face severe practical and economic impediments that preclude them from accessing traffic at remote locations, whether a Serving Area Interface (“SAI”) or a remote terminal (“RT”).<sup>76</sup> Accessing traffic from copper subloops at remote locations is grossly uneconomic and impracticable for many reasons. Among other things, remote collocation requires a CLEC to bear costs that are comparable to collocating at a central office, but allows a CLEC to serve only a fraction of the customers served by the ILEC. *See id.* ¶¶ 80-84; *see also infra* Part VII. In addition, remote collocation is not viable because:

- (1) there is insufficient space to collocate the necessary electronics at most RTs;
- (2) even if they could collocate at an RT, CLECs cannot efficiently cross-connect to the ILECs’ facilities, because the remote interconnection point is typically located at an SAI (not the RT), requiring facilities construction;
- (3) remote locations typically lack the power and HVAC CLECs need to deploy remote electronics;

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<sup>75</sup> In other instances, the incumbent may remove the copper cable that previously existed and replace it in the existing conduit with a fiber. In contrast, CLECs would have to construct their facilities from scratch.

<sup>76</sup> When an ILEC deploys NGDLC, all of its customers’ demand is aggregated first at a Serving Area Interface (“SAI”) and, ultimately, at a remote terminal (“RT”), where it uses remotely deployed DLC equipment to concentrate demand from large numbers of customer loops and place it onto digital feeder facilities that are routed back to the central office. *See* AT&T at 133-34; Riolo NGDLC Dec. ¶¶ 20-23, 33-35, 65-66.

(4) CLECs that collocate remotely must obtain inefficient dedicated access to transmit their customers' traffic to the ILEC central office; and

(5) the practical problems associated with constructing remote collocations make such installations exceedingly costly and time consuming, if they are even possible.

*See* AT&T at 133-34, 190-203; Riolo NGDLC Dec. ¶¶ 65-74; *see also infra* Part VII.

Nor would CLECs and ILECs be on an equal footing with regard to a "greenfield" build, such as a new residential subdivision. *See* SBC at 19. In virtually all cases, the ILECs will be in a better position to serve new developments residences because of their huge scale and scope economies and their ability to incrementally extend their existing network. Fea-Giovannucci Reply Dec. ¶ 8. First, simply deploying loops is not sufficient to offer telecommunications services to customers. Those loops must be connected to switches (either using feeder/distribution plant or local fiber rings). Thus, even if CLECs could place loops in the ground at the same cost as ILECs, they still remain at a significant cost disadvantage because the ILECs' ubiquitous networks enable them to build much less outside plant to connect the new residences to the local switches that provide service. Indeed, the ILECs typically deploy substantial excess fiber capacity in their networks because the incremental costs of placing larger cables (as insurance against having to build again) is a small fraction of the costs of new construction. Thus, this existing fiber capacity can readily be used by the ILECs for network extensions.

And, of course, CLECs cannot deploy outside plant at costs comparable to what the ILECs had to spend. To provide service, CLECs must incur costs and/or suffer delays that are never offset by merely increasing their market share after the initial entry. *See USTA*, 290 F.3d at 427. As a legacy of their exclusive franchises, many ILECs have "omnibus" rights of way. Fea-Giovannucci Reply Dec. ¶ 9. In contrast, CLECs must *first* gain access to the necessary

rights of way before they can build. As explained in detail in the Fea-Giovannucci Reply Declaration (¶¶ 30-37), the process of obtaining the necessary rights of way is costly and, in the best of circumstances, can take months.

This, of course, assumes that a CLEC has in place a switch capable of serving the new customers. If it does not, it would need to incur the considerable costs and delays of deploying one. Many subdivision developers are unlikely to take the chance that the switch can be deployed and connected to the loops in time, particularly when there is an established alternative (the ILEC) that can provide service almost instantly. Relatedly, only a handful of new developments generate sufficient traffic to independently justify their own switch. Thus, to achieve switching costs comparable to the ILEC, the CLEC must not only be able to serve the new development, but also surrounding areas. *See* Pfau Reply Dec. ¶ 6 n.1. As explained in AT&T's initial comments (at 203-31), and in Part VIII, below, limitations on loop-transport combinations and NGDLC loops, and the inability to obtain coordinated cut-overs that are comparable in quality to the ILECs' access to the same loops have prevented CLECs from efficiently deploying switches to provide service to customers served by voice-grade loops. Accordingly, until entry barriers are removed – by elimination of use restrictions and implementation of electronic loop provisioning – CLECs cannot self provide switching at costs comparable to ILECs to any customer, whether “old” or “new.”

Finally, the ILECs enjoy several other advantages over CLECs even in a greenfield scenario. ILECs enjoy much lower capital costs due to their scale efficiencies and captive customer base. *See* AT&T at 117 n.90 (documenting differential access to capital). Given this, there will be many instances where it will be economic for an ILEC to deploy new facilities, but where CLECs simply will not be able to do so. Indeed, as AT&T explained, because of capital



constraints it is unable to fund many potentially profitable local network constructions that it has identified. Leshner-Frontera Dec. ¶¶ 73-77; *see also* FCC New Release, *FCC Chairman Michael Powell Appointed to President Bush's Corporate Fraud Task Force* (July 9, 2002) (quoting Chairman Powell as stating that there is "severe capital crisis [that is] putting a tremendous strain on the telecommunications industry"). Additionally, the ILECs enjoy an established brand that make it much more likely that a developer would chose an ILEC over a CLEC even if they provide comparable service at comparable price. *See Michigan 271 Order* ¶ 15 (ILECs enjoy a competitive advantage because of their "strong brand recognition"). Given these basic economic considerations, that there is clearly no "bright line" which could be used to determine instances in which a new development is sufficiently large and sufficiently separate from existing ILEC networks that a CLEC and an ILEC would have comparable costs.

And nothing significant would change even if the ILECs actually deployed FTTH in the future. It is clear from the proposals discussed in the comments that the ILECs intend to use their *existing* and already installed fiber as the backbone for any such projects. *See* SBC at 46. Thus, at least that portion of their FTTH projects are not "new" at all. And there is no possibility that either these wires or fiber outside loop plant could be installed by another carrier with equal cost or efficiency, because, as shown in the "greenfield" discussion above, no competitor can match hope to match the ILECs' existing economies of scale, scope and density.

Indeed, the FTTH "business case" envisioned by Corning assumes that the ILEC starts as the voice and DSL service provider for the vast majority of customers. Corning, CSMG Report at 7, 19. In other words, the business case assumes that the DSL market (and the market for bundled voice and data services) has already been ceded to the ILECs and that they do not have to convince a customer to switch providers prior to having a loop in place. Thus, the business

case proceeds on the assumption that the ILEC can continue to provide service to those existing customers with the “old” DSL capable facilities, build “new” fiber loops (or subloops in an NGDLC architecture), and then switch the customers over. And, as in the current incremental deployment of NGDLC, the future deployment of FTTH would be overlaid on top of existing runs and therefore fully utilize the ILECs’ vast collections of rights of way.

But given the enormous fixed and sunk costs of loops, the Commission has correctly recognized that a CLEC cannot simply build a loop before it has a customer to use that loop. *See UNE Remand Order* ¶ 182 (“[W]ithout access to unbundled loops, competitive LECs would be required to sink a large initial investment in loop facilities before they had a customer base large enough to justify such an expenditure.”). Thus, unlike the ILECs, CLECs must win customers first and only then build facilities to those customers.<sup>77</sup> However, as explained in AT&T’s comments (at 146-48), most customers – even the largest ones – are unwilling to order service and then wait months for a CLEC to construct a loop so that they can be served. Customers are even resistant to moving existing services to newly built access facilities. *Fea-Giovannucci Reply Dec.* ¶ 61; *Fea-Taggart Use Restriction Dec.* ¶¶ 32-37. And, CLECs deploying FTTH would also have to incur the fixed costs of acquiring the necessary rights of way, trenching, and placing the fiber conductor in new conduit. *See AT&T* at 142-43. In the real world, these are huge hurdles that the ILECs do not have to bear. These problems, which apply to the largest customer locations with the greatest usage, are magnified substantially in a residential FTTH setting because: (1) the anticipated revenues from even “high roller” residential customers are much lower than from large business customers, so that it would take much longer to offset the

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<sup>77</sup> Indeed, the current plight of many failed CLECs is that they succumbed to the “build and they will come” mentality. *See Willig Dec.* ¶¶ 90-98 & Exh. 1.

high fixed costs of deploying an all-fiber loop and (2) the risks of stranding plant (and lost sunk costs) are much greater given the higher level of residential customer churn relative to business churn.

**b. Providing access to unified loops will not substantially increase ILEC costs.**

Contrary to the ILECs' claims, the costs of unbundling will not themselves have any material effect on the profitability of the ILECs' retail services or on their ability to compete with cable or other competing broadband offerings where there is sufficient demand.

SBC and Qwest claim that the current unbundling rules threaten deployment of broadband networks because they greatly increase the costs of these networks. SBC at 15, 51-53 & Att. C; Qwest at 49. In Attachment C to its comments, SBC describes its concerns in some detail in connection with its roll-out of NGDLC architecture, which it calls "Project Pronto." In particular, SBC says unified loop access increases ILEC costs in three ways, by: (a) introducing inefficiencies in the use of the DLC infrastructure, (b) jeopardizing feeder capacity, and (c) generating substantial additional costs. SBC also alleges, in conclusory fashion, that CLEC access would also increase costs associated with future roll-outs of a version of FTTH, which SBC calls "Broadband Passive Optical Network" ("BPON") architecture. SBC at 51-52.

These arguments would be irrelevant to AT&T's unified loop access proposal, even if they were supported by sworn engineering affidavits, which they are not. Indeed, ILECs have never claimed that the access to unified loops AT&T proposes is infeasible. To the contrary, SBC's own statements and actions in connection with Project Pronto confirm that unified loop unbundling does not threaten broadband investment.

For example, in the *Project Pronto Waiver Order*, SBC itself proposed to provide "access to the features, functions and capabilities of the combination of network elements used to

provide SBC's Broadband Offering (e.g., the OCD and the plug-in card)," priced "'in each state in accordance with the pricing methodology then applicable to unbundled network elements under Section 251(c)(3) and 252(d)(1) of the Communications Act.'" *Project Pronto Waiver Order* ¶ 25. Under SBC's proposal, approved by the Commission, CLECs "first receive access to the OCD in the central office . . . . In this way a carrier will receive access to a 'port' on the OCD, which is then used to establish a 'permanent virtual connection.' Using this access to the OCD, a carrier will be able to connect thousands of consumers served by plug-in cards installed [by the ILEC] in NGDLC systems . . . to its advanced services network." *Id.* ¶ 31.

*Under AT&T's Proposal, CLECs Use Only ILEC Line Cards That ILECs Have Chosen To Deploy.* In its comments SBC states that "[t]he additional costs that would be created by the CLECs' requests are driven by two factors." SBC, Att. C at 2 First, "allowing CLECs to 'collocate' line cards in order to support differentiated services would result in stranded capacity in Project Pronto RT locations." *Id.* Second, "CLEC-placed line cards would significantly increase SBC's service provisioning costs . . . [because a] CLEC could quickly exhaust th[e] limited [ILEC bandwidth] capacity by offering bandwidth-intensive services that the Project Pronto architecture was not designed to efficiently support." *Id.* at 4.

Neither of these assertions about hypothetical additional cost is relevant to the proposals AT&T has made over the last two years with respect to unbundling of NGDLC loops. Under AT&T's proposal, CLECs would only use line cards that *ILECs* have chosen to deploy. Gerszberg Reply Dec. ¶ 8. AT&T only seeks access to unified loops in the ILEC's Central Office, which requires only that a CLEC be able to obtain access to its customers' high frequency signals at an Optical Concentration Device ("OCD"), *i.e.*, the same place the ILEC accesses its own customers' signals. *Id.* This renders moot all hypothetical concerns about

NGDLC “port exhaustion” and incompatibility of line cards, because it does *not* entail the collocation of *any* CLEC-owned line cards in the Remote Terminal. Because only the ILEC places the line cards in the DLC, and because the connection between the customer and the service provider network is defined by a Permanent Virtual Circuit (“PVC”) engineered by the ILEC rather than a hardwired connection, no inefficiency is introduced in the Remote Terminal. *Id.* As a result, different carriers can use the same multi-line card to serve customers subtending the Remote Terminal. This avoids any inefficiencies in the use of the ILEC’s DLC infrastructure.

AT&T’s proposal also renders moot SBC’s hypothetical concerns about NGDLC “port exhaustion.” SBC Comments, Att. C. Indeed, AT&T’s proposal would *promote* efficient NGDLC port utilization by effectively allowing single-port unbundling of the NGDLC. Gerszberg Reply Dec. ¶ 9 & n.2. This is achieved by allowing CLECs access to NGDLC loops at the OCD, which permits CLEC access to any and all ports (*i.e.*, end-users) on the NGDLCs subtending a particular OCD via the establishment of PVCs. *Id.* ¶ 8.<sup>78</sup>

*AT&T’s Proposal Would Not Even Remotely Jeopardize Feeder Capacity.* Another claimed hypothetical cause of increased costs associated with CLEC access to NGDLC loops is that CLEC-placed line cards could exhaust ILEC bandwidth capacity by offering bandwidth-intensive services that the Project Pronto architecture was not designed to support efficiently.

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<sup>78</sup> AT&T’s unified loop approach also promotes competition, because the number of service providers available to retail customers would only be limited by the number of carriers that have arranged to access the ILEC’s OCD, and each such CLEC can offer service to all of the customers served by all of the RTs that terminate on the OCD. Thus, AT&T’s unified loop unbundling proposal gives end-users greater flexibility and options in choosing their local service provider while, at the same time, having no effect at all on so-called NGDLC port exhaust. Gerszberg Reply Dec. ¶ 9 & n.2.

SBC, Att. C at 4. AT&T's unified loop access proposal avoids this concern by permitting CLECs to use only those line cards that ILECs have chosen to deploy.

Moreover, the ILECs have *not even attempted* to show that there would be material impacts on the capacity of their existing facilities. Instead, they have made only generalized allegations with no reference to the many technical considerations that must be analyzed with respect to such a claim. For example, the ILECs have not utilized current CLEC DSL market shares or reasonably foreseeable CLEC DSL penetration rates to analyze whether (1) varying service classes offered by CLECs other than Unspecified Bit Rate ("UBR") would lead to exhaustion of OC-3 feeder facilities, or (2) whether CLEC access to the OCD would materially increase costs.

By contrast, AT&T's detailed engineering analysis demonstrates that, under very conservative assumptions regarding typical Remote Terminal ("RT") size, likely CLEC market shares and DSL penetration rates, as well as generally accepted planning assumptions relating to data and voice traffic generated by consumers, there is virtually no likelihood that the typical OC-3 feeder capacity used for RTs would be exhausted. Gerszberg Reply Dec. ¶¶ 10-21. In fact, when such considerations are taken into account, it is unlikely that more than *one-fifth* of an OC-3's capacity would be utilized even if Constant Bit Rate ("CBR") class of service is permitted for applications such as derived voice lines (*e.g.*, voice-over-DSL ("VoDSL")). *Id.* ¶¶ 11, 15-18. Moreover, despite their claims to the contrary, even ILECs such as SBC recognize that when proper engineering considerations are taken into account, multiple classes of service, including CBR, can be readily provisioned over NGDLC architectures without any risk of exhausting the feeder. *Id.* ¶¶ 19-20. Lastly, in the unlikely event that a particular feeder might

exhaust, its capacity could be readily increased in several ways. *Id.* ¶ 21. Thus, there is no basis for any legitimate claim that unbundling of unified loops would create a feeder exhaust issue.

*The ILECs' Claims Concerning Additional Costs Are Exaggerated.* ILEC claims regarding the costs associated with providing multi-carrier access are wildly overblown. Multi-carrier access to customers served by an ATM-based transmission path requires only (1) an appropriately sized port on the network side of the OCD (where the carrier will access its customers' signals) and (2) a means to define the PVC between an end user and the carrier's access point at the OCD. Gerszberg Reply Dec. ¶ 22. This does not require RT collocation, nor does it require an OCD dedicated to an individual CLEC. Instead, it only requires CLECs to obtain a port on the OCD and administrative procedures to define the PVC – something done every day by ATM network administrators, and indeed a capability that is already in place, as evidenced by ILEC NGDLC “service offers” such as SBC’s “Broadband Wholesale Service” offering. *Id.*

The OCD equipment (*e.g.*, Lucent CBX 500 ATM modules) being deployed in ILEC NGDLC architectures such as SBC’s Project Pronto architecture and Verizon’s PARTS architecture are designed to be very scalable and thus are very supportive of multi-carrier access. Gerszberg Reply Dec. ¶ 23. In some cases, the ILEC’s OCD may already have extra, unused ports (*e.g.*, DS-3, OC-3) that could be assigned to CLECs seeking to access the loops subtending that OCD. Where no extra, unused ports are available, the scalable, modular design of OCD equipment such as Lucent’s CBX 500 allows for the flexible, cost efficient addition of ports. An ILEC would simply need to add a DS-3 or OC-3 Input/Output Module (“IOM”) in order to increase the number of needed ports on the OCD, which can be done much more cost

effectively than requiring CLECs to collocate remotely. *Id.* Finally, there is no reason to believe that the TELRIC costs for access to NGDLC would be less than the ILECs' actual costs.

*No Significant Costs Should Be Caused By Unified Loop Unbundling If FTTH/BPON Is Ultimately Provided For Local Loops.* The costs of accessing "unified" loops in the ILEC central office are likely little different from the costs for NGDLC access when and if ILECs implement FTTH architecture. Gerszberg Reply Dec. ¶ 26. For either form of network architecture, the CLEC would receive access to its customers' packets at a port on the network side of the OCD (or its equivalent) in the ILEC central office. Whether these packets traverse a FTTH or NGDLC architecture is irrelevant, assuming the OCD port is of the appropriate capacity to terminate the facility. Once the facility is terminated, a packet is a packet regardless who it goes to or where it comes from. Thus, any issues raised with respect to FTTH access are premature and, at best, highly speculative.

As described above, there is no basis to assert that CLECs could, on their own, install FTTH facilities; nor do any pro-ILEC commenters make such an assertion. Nor is there any reason to believe that the TELRIC costs for access to "new" FTTH would be less than the ILECs' actual costs. *See* Willig Reply Dec. ¶ 88. The problem is one of scale: CLECs cannot afford to build FTTH facilities at a cost close to what the ILECs can.

Furthermore, as described above, deployment of FTTH at any significant magnitude, particularly to support on-going service for residential customers is certainly not likely in the near future. Because FTTH is only "in the earliest stage of development . . . [whose] potential will not be realized within the next five years,"<sup>79</sup> issues relating to its development cannot

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<sup>79</sup> IDC, *Passive Optical Networks Market Forecast and Analysis, 2000-2005*, at 18 (Dec. 2001)



reasonably be a basis for undoing critical rules needed to support competitive local markets today and over the short term.

**c. TELRIC-based rates do not inhibit efficient ILEC investment.**

In the alternative, the ILECs argue that unbundling obligations inhibit them from making investments that will allow them to offer broadband services because when the necessary demand exists, CLECs will purportedly be able to “free ride” on the ILEC investment and offer their own competing services over the ILEC facilities, without having taken or assumed any of the ILECs’ risk in making the infrastructure investments in the first instance. Verizon at 27-33; *see also* BellSouth at 46; Qwest at 48; HTBC, Haring-Rohlf Report at 2-3. The record here conclusively demonstrates that these arguments do not require or permit the Commission to narrow the scope of its national unbundling rules. *See USTA*, 290 F.3d at 424-25.

As Professor Willig explains, there is simply no “free riding” here, because the ILECs are permitted to charge cost-based TELRIC rates for the access that they provide. Willig Reply Dec. ¶¶ 86-87. And rather than avoiding risk, the rates CLECs must pay include a risk adjusted return on capital. *Id.* ¶ 87; Willig Dec. ¶¶ 164-65; *see also* Massachusetts at 6. Moreover, if the ILECs are actually concerned that customers will abandon their facilities for those of cable providers, they should, as explained above, be welcoming, rather than shunning, the CLEC customers who want to wholesale those very facilities. Willig Reply Dec. ¶ 88.

At bottom, then, the ILECs are ultimately forced to concede that that their complaint is *not* against unbundling *per se*, but the prices they can charge for unbundled access. As Qwest frankly recognizes “[t]he effect of unbundling requirements on both CLECs’ and ILECs’ investment incentives . . . depends to a large extent on how the Commission’s pricing rules are interpreted and applied.” Qwest at 50-51. Thus, the ILECs’ claims are simply a re-packaged version of their now-familiar claim that TELRIC-based rates are insufficient to justify the risks

of deploying NGDLC (or FTTH) and allow CLECs to purchase access to such facilities at “below-cost” rates. *See Verizon* at 32-33

The Supreme Court’s *Verizon* decision has now finally laid those baseless claims to rest. Even if ILECs actually face greater costs in deploying broadband facilities because of higher equipment and operations costs or increased competitive or market risks, TELRIC is sufficiently flexible to account for any such increases. *See Willig Reply Dec.* ¶¶ 85-87. Thus, there is no legitimate basis for the ILECs’ claim that TELRIC-based rates discourage efficient economic investment. *See id.* The Supreme Court has specifically recognized that the depreciation and cost of capital components of TELRIC allow the ILEC to be compensated for *all* the risks that they assume in deploying facilities. *See Verizon*, 122 S. Ct. at 1677 (“TELRIC itself prescribes no fixed percentage rate as risk-adjusted capital costs and recognizes no particular useful life as a basis for calculating depreciation costs” and, therefore, may be “adjusted upward if the incumbents demonstrate the need”). Further, because “TELRIC rates are calculated on the basis of individual elements,” “TELRIC rates leave plenty of room for differences in the appropriate depreciation rates and risk-adjusted capital costs depending on the nature and technology of the specific elements to be priced.” *Id.* at 1651; *see also Willig Dec.* ¶¶ 159-66. This completely satisfies Qwest’s criteria for “appropriate” pricing – *i.e.*, rules that eliminate the impact of unbundling on investment decisions by “account[ing] for the relevant competitive and regulatory risk in determining the cost of capital.” Qwest at 53.

Rather than showing that TELRIC is a one-way bargain that reduces potential upsides, but leaves ILECs exposed to downsides, the “oil drilling” hypothetical proffered by Haring and Rohlfs provides an apt illustration that shows that TELRIC rates fully reflects the ILECs’ risks. *See HTBC*, Haring-Rohlfs Report at 2-3. Specifically, they analogize the incentive impact of

TELRIC-based unbundling to a competitive oil company that has an “option” to purchase oil from an incumbent’s wet wells, but not having any commitment with regard to wells that come up dry. Based on this construct, they argue that the competitive oil company would not have to bear any of the incumbent’s costs of its dry wells.

Nothing could be further from the truth. TELRIC-based rates in this context would be calculated by taking *average* cost of *all* wells and dividing that cost by the number of barrels of oil produced (in this case, the oil produced from the wet wells). Clarke-Donovan Reply Dec. ¶ 50. Thus, the unit cost would be based *both* on wells that turned out to be dry as well as those that actually produced oil. *Id.* Furthermore, to the extent that there is *ex ante* uncertainty as to the proportion of a company’s wells that will be dry or wet, the rate of return incorporated into the TELRIC price of oil would be higher than what might be incorporated into the TELRIC of a product that is produced by a less risky production process. *Id.* Thus, although the competitive carriers have a “call option” to buy the incumbent’s oil, exercising that option requires them to pay a price that fully compensates the incumbent for all its risk. *Id.* Similarly, if a more competitive environment made it more likely that an incumbent’s capital will be devalued – for example, because of entry or by more rapid technical progress – TELRIC depreciation lives are appropriately altered to reflect this consideration. *Id.*

Application of these basic TELRIC principles to the ILECs’ current and planned NGDLC investments is exceedingly simple. As noted above, current TELRIC rates already include fiber feeder on all loops over 18,000 feet. Thus, the cost models used by the State commissions to set UNE rates already account for all of the wiring costs of a DSL-capable network. Willig Dec.

¶ 162. All that needs to be included then is the additional cost of the electronics necessary to support data services. These costs are, in the ILECs' own words, "modest."<sup>80</sup>

Assuming that the ILECs ever deploy FTTH facilities, basic TELRIC principles do not change simply because the investment at issue is FTTH. *See* Willig Dec. ¶ 164. To the extent the forward-looking risks and costs of deploying all-fiber loops warrant, CLECs would pay higher rates if they lease all-fiber loops to provide even higher capacity (*i.e.*, more than NGDLC-based) services.

Indeed, the ILECs' attacks against TELRIC in connection with the deployment of new FTTH is particularly ironic. The ILECs' historic objection to TELRIC, echoed in their comments here, is that it denies them recovery of their *historic book costs*. *See* Verizon at 32 (arguing that TELRIC precludes ILECs from "ever recovering the costs of its actual investments"). But this objection has no application at all to the hypothetical FTTH systems that they refer to here – or to anything else that is actually a totally "new" facility. Assuming the ILECs act efficiently (as they claim that they will) and deploy state-of-the-art equipment and facilities, their TELRIC costs of the additional equipment used to deploy a FTTH system would be approximately the same as their book costs.<sup>81</sup> That is because the forward-looking, economic

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<sup>80</sup> Duane Ackerman, *Remarks at Goldman Sachs Communicopia Conference* (Oct. 3, 2001). These additional costs would, of course, reflect the relevant cost of capital for the electronics, which in turn would reflect any increased risk from deploying DSL electronics.

<sup>81</sup> Verizon (at 32) complains that over time TELRIC rates may fall below the ILECs' book costs if it subsequently turns out that subsequent advances render the technology used by the ILEC inefficient. Of course, it could equally be the case that the "reproduction" costs of FTTH increase over time (because labor and material costs increase, for example). Moreover, to the extent that there is a substantial risk of technological obsolescence at the time the "new" FTTH network was initially deployed, that would be reflected in the cost of capital and depreciation rates used in calculating the TELRIC rates. In all events, Verizon's quarrel is not with TELRIC, it is with competition. In competitive markets, a company must always bear the risk that its investment might be rendered less valuable by its rivals' subsequent investments. Thus, in naked  
(continued . . .)

costs of deploying a new investment would be virtually identical to the *actual* costs that the ILEC incurs. Willig Reply Dec. ¶ 88; *see also* Clarke-Donovan Reply Dec. ¶ 44; Willig Wireline BB Classification Dec. ¶ 84. Indeed, the only way that a properly calculated TELRIC rate for “new” FTTH equipment and facilities would be significantly below the ILECs’ actual costs is if the incumbent was grossly inefficient in procuring, deploying, or designing the network.<sup>82</sup>

In this regard, it is also important to recognize that the ILECs can greatly reduce the overall magnitude of the investment put at risk from deploying FTTH by using an incremental build strategy. ILECs are under no compulsion to, and indeed, in most cases likely would not, install FTTH on a service area-wide level. Rather, the ILECs would proceed efficiently by upgrading their networks incrementally, beginning with those areas where the costs of deployment are the lowest and the potential revenues are the highest. They would then provision additional fiber as conditions warrant. In short, “‘fiber-to-the-curb’ systems would entail extending fiber to individual subscribers, and the investments in question would appear to be targeted to individual customers and to occur incrementally only in response to specific demand.” Willig Dec. ¶ 166.

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(... continued)

terms, Verizon is arguing that it will invest in new technologies only if it can be assured of earning supracompetitive profits. Therefore, the Commission must recognize that the effect of “deregulating” access to high frequency loop spectrum (of any kind) means that it is making a policy judgment to choke off competition for broadband services and award the ILECs a monopoly and the attendant supracompetitive profits.

<sup>82</sup> In fact, the ILECs’ TELRIC costs may be in excess of book costs because in many instances UNE rates are using cost models that assume “rectilinear” routing of outside plant, which generates larger quantities of outside plant than is actually used by the ILECs.

In sum, although TELRIC does not provide ILECs with monopoly-level returns, it nonetheless provides them with a return that reflects the actual risks that they face in providing wholesale facilities to competitors.<sup>83</sup> Willig Reply Dec. ¶¶ 85-87. For these reasons, the ILECs have not shown – and cannot show – that TELRIC-based rates will necessarily fail to compensate them adequately for network upgrades (even assuming such upgrades actually result in higher costs). Thus, there is simply no basis to assume that a requirement to lease UNEs at risk-adjusted TELRIC rates will discourage any efficient ILEC investments. Notably, this is the same conclusion reached by the OECD in its recent analysis of local loop unbundling:

[I]t is argued that incumbents will have little interest in upgrading their existing facilities if they have to open them to competitors. The recent history of ADSL upgrading by incumbents has shown that this argument does not hold. . . . Evidence on ADSL deployment has shown that it is in those countries where competition is weak . . . that broadband has not developed.

*OECD White Paper* at 15. Therefore, the surest way to promote the deployment of “advanced telecommunications capability to all Americans,” is for the Commission to eliminate existing barriers that prevent competitors from gaining non-discriminatory access to local loops to provide broadband services.

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<sup>83</sup> Although the ILECs are careful not to say directly that they need monopoly returns to deploy broadband networks, this argument is implicit in their economists’ attack on TELRIC-based rates for unbundled access to broadband facilities. See Reply Declaration of Dennis Carlton, Hal Sider and Gustavo Bamberger, CC Docket No. 01-337, ¶ 8 (attached to Reply Comments of Verizon, filed Apr. 22, 2002) (“[R]egulations that require ILECs to share local loops at a price below the level that would prevail in the unregulated market or to provide service at *cost-based* tariffed rates may discourage investments by ILECs.”) (emphasis added); *id.* ¶ 9 (requiring ILECs to provide unbundled access to CLECs at TELRIC-based rates that are less than they otherwise could charge will “adversely affect[ ]” the “ILECs’ incentives to invest in their network . . . even if the regulated prices accurately reflect the ‘cost’ of providing the . . . network elements.”). Likewise, the only way in which TELRIC rates can be said to cap “upside return,” Verizon at 33, is that an ILEC could, absent regulation, earn supracompetitive returns because, as discussed, TELRIC already provides risk-adjusted returns equivalent to those earned in competitive markets.

**d. The ILECs' allies' attempts to "quantify" the impact of unbundling on broadband investment incentives are fundamentally flawed.**

Seeking to shore up the deficiencies in the ILECs' economic analysis, several commenters proffer analyses that purport to quantify the impact of TELRIC-based unbundling on ILEC investment incentives, particularly with regard to broadband networks. All of these "studies" are fundamentally flawed and should be rejected.

*Corning.* Corning sponsors the CSMG Report which concludes that unbundling impedes ILEC incentives to deploy FTTH. CSMG can reach determination, however, only by making several incorrect assumptions. Correcting these obvious flaws with more realistic assumptions shows that there is no material difference in the rate of FTTH deployment in either a "free" or "regulated" market. Clarke-Donovan Reply Dec. ¶¶ 17-29.

As explained above, CSMG overstates the deployment of FTTH in the "free market" case by inflating the revenues generated by FTTH and understating the costs of FTTH. With regard to costs, CSMG omits substantial categories of equipment necessary to provide FTTH. For example, CSMG does not account for: i) the additional interoffice costs that ILECs would have to incur to offer 20 Mbps data and video services and multiple derived POTS lines; ii) the optical "line cards" necessary to drive this loop, Voice Gateways and ATM switches needed to handle the voice and data services carried by the FTTH network; iii) the necessary video switching encoding and transmission facilities that are necessary; and iv) all the distribution drop plant that is necessary to carry signals from the central office to the subscriber's premises. *Id.* ¶¶ 24-29.<sup>84</sup>

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<sup>84</sup> And while CSMG does account for the placement costs of the limited outside plant, those costs are understated because CSMG assumed a much higher percentage of aerial plant than is appropriate. *Id.* ¶ 27.

With regard to revenues, CSMG assumes that the ILECs will earn revenues well in excess of those that could realistically hoped to be earned from FTTH services. For example, CSMG assumes, without any support, that ILECs providing FTTH would increase their market share of video programming services from 3% (in 2003) to 40% (in 2013) and be able to *increase* their prices from \$57 per month to \$82 – a level greater than earned by cable and DBS providers. *Id.* ¶ 19. Ordinarily, a new entrant that charged more than incumbent providers would not expect to earn steadily increasing market share and higher per-subscriber revenues. *Id.* Similarly, CSMG assumes that “other revenues” – which, while never explained in detail, are said to include items like “CPE and set-top box fees” – will (i) increase by 250% over the 10 year study period, (ii) have a steadily increasing “take rate,” and (iii) earn consistently huge margins. *Id.* ¶ 20. Not content to assume high revenues, CSMG independently assumes that ILECs will be able to sustain unrealistic gross margins of 70% for voice, 56% for data, 50% for video and 70% for “other” services. *Id.* ¶ 22.

Finally, even assuming CSMG has properly calculated the extent of FTTH deployment in the “free market,” it resorts to gimmicks to make it appear that deployment harmed by unbundling. For example, CSMG assumes that an ILEC could charge only \$20 per month for an unbundled FTTH loop. *Id.* ¶ 31 (citing CSMG Report at 41). This is highly implausible, given that \$20 per month is near (and in some cases below) the rate that State commissions have set for many copper *voice-grade* loops. Further, even accepting CSMG’s suspect conclusion that it would cost about \$2000 per subscriber to build an all-fiber loop, the corresponding monthly UNE rate (and thus ILEC revenues) would be substantially higher than that assumed by CSMG. *Id.* ¶ 32. This single error devastates CSMG’s conclusions. In reality, the wholesale revenues that the “regulated” ILEC earns from deploying FTTH would be much greater than those



assumed by CSMG, which in turn means that the percentage of homes to which FTTH could be deployed profitably under the “regulated” scenario would be much greater than claimed by CSMG.

CSMG also biases its result by assuming that the weighted cost of capital increases from 13% to 15% as a result of unbundling obligations thus making it substantially more “costly” to deploy FTTH in the “regulated” scenario. *Id.* ¶ 33. The opposite is, in fact, true. As shown above, unbundling actually *decreases* the overall risk of deploying FTTH by increasing the usage (and ILEC revenues) from those facilities and by helping the ILECs reduce customer migration off their networks. *See also id.* ¶ 34. Hence, unbundling can be expected to lead greater, not less, deployment of FTTH than the “free market” base case modeled by CSMG.

But even these flaws are not drive the “regulated” scenario results to sufficiently low levels, so CSMG also resorts to using several *ad hoc* multipliers to account for what CSMG claims are the additional ways in which unbundling increases the costs of FTTH.<sup>85</sup> None of these additional costs are supportable. *Id.* ¶ 36. This should not be surprising, as CSMG candidly admits that its sole basis for these assumptions is “*informal* discussions” with ILECs. *Id.* ¶ 42 (quoting CSMG Report at 40-41). And just as fundamentally, CSMG fails to recognize that even if these costs were actually incurred by the ILECs, they would still be able to recover them, as long as they could show that such costs were efficient. *Id.* ¶ 37.

*Progress & Freedom Foundation (“P&FF”).* The P&FF “study” is similarly flawed. The entirety of the study is a reproduction of statistics from a report of a financial analyst, Anna-

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<sup>85</sup> For example, “[b]ased on interviews with ILECs,” CSMG increased the cost of central office equipment by 20%, *id.* ¶ 36 (quoting CSMG Report at 41), and increased network maintenance costs by 33%, *id.* No back up is provided for these arbitrary cost multipliers. *Id.*

Marie Kovacs of Commercial Capital Markets (“CCM”).<sup>86</sup> The CCM Report purports to compare the average embedded cost of a residential “access line” with UNE-P prices and finds that UNE-P prices fail to cover embedded costs. Based on this, P&FF concludes that unbundling “discourag[es] and delay[s] investment by incumbents,” particularly for “new facilities investment in fiber to the home.” P&FF at 31, 35.

But this is a *non sequitur*. Even if the CCM Report were correct that the embedded costs of a typical ILEC access line were higher than the forward-looking, economic cost of that line – which, as explained below, it is not – this analysis ignores that the efficient costs of deploying new broadband facilities are in fact recoverable under the Commission’s TELRIC pricing standard. Clarke-Donovan Reply Dec. ¶ 44. As explained above, the actual costs of new broadband facilities are likely to be very close to the forward-looking costs of such facilities. Moreover, the CCM Report was prepared and released before the Supreme Court’s decision finding that the use of embedded costs would inhibit competition and generate higher prices for consumers. *Verizon*, 122 S. Ct. at 1672-74.

In all events, the CCM Report P&FF relies upon is severely flawed. Critically, it does not accurately calculate the historic costs of the facilities leased by a UNE-P customer, the baseline for the report’s conclusions. In particular, the CCM Report mixes apples and oranges, comparing the *wholesale* UNE-P rate to ILEC *retail* costs. Clarke-Donovan Reply Dec. ¶ 47. As State commissions have found, a substantial percentage of ILEC retail costs are avoided when providing wholesale UNEs. *Id.* ¶ 47 n.23. Once this and other fundamental flaws are

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<sup>86</sup> P&FF cites the November 12, 2001 report by Ms. Kovacs. See P&FF at 22 n.42. That report, however, has been superceded by an April 15, 2002 report. See Anna-Maria Kovacs, *The Status of 271 and UNE-Platform in the Regional Bells’ Territories* (Apr. 15, 2002). Thus, the Clarke-Donovan Reply Declaration analyzes the more recent report, which provides somewhat different statistics.